

Name: Answer Key Date: Bell:

Please use to
check your answers.

Test Wed.
10/4

ADVANCED Math 7

STUDY GUIDE: Unit 1 Test—Part 1

PART I: SOL 7.1a Recognize powers of 10 with negative exponents by examining patterns.
Write a power of 10 with a negative exponent in fraction and decimal form.

1. What is 10^{-6} in decimal form? 0.000001
 1×10^{-6} 0.000001

May use a
calculator
for this
section
only! 7.1a

$10, 10^x, 10^{-}$

Complete the table:

Power of ten	Fraction	Decimal
10^{-2}	2a.) $\frac{1}{100}$	2b.) 0.01
3a.) 10^{-5}	3b.) $\frac{1}{100000}$	0.00001
4a.) 10^{-4}	$\frac{1}{10,000}$	4b.) 0.0001

5. Select all choices that are equivalent to 10^{-3} . Check fractions on calculator.

$\frac{1}{10^{-3}}$	-0.001	$\frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10}$
0.001	$\frac{1}{1000}$	$\frac{1}{10^3}$

Part II. SOL 7.1b Write a number greater than 0 in scientific notation. Recognize a number greater than 0 in scientific notation.

6. Which of the following is correctly written in scientific notation?

- a. ~~$.7234 \times 10^{-1}$~~
b. ~~72.34×10^2~~
c. 7.234×10^3
d. ~~$7,234 \times 10^0$~~
↑ ?



8. Express the following in scientific notation:
0.00602

6.02×10^{-3}

7. An african male elephant can grow to be 13,000 pounds. Which of the following shows the elephant's weight in scientific notation.

- a. 0.13×10^5
b. 1.3×10^4
c. 13×10^3
d. 130×10^2

1.3×10^4
13000

9. Express the following in standard notation:
 2×10^{-4}

0.0002

Part III: SOL 7.1c Compare, order and determine equivalent relationships among fractions, decimals and percent form. Ordering is limited to no more than 4 numbers.

***SOL 8.1b Compare and order no more than five fractions, decimals, percents and numbers in scientific notation.**

Complete the table:

dip



Fraction	Decimal	Percent
$\frac{1}{8}$	10a.) 0.125	10c.) 12.5%
$\frac{3}{5} = \frac{6}{10}$	11a.) 0.60	11b.) 60%
$\frac{1}{3}$	12a.) $0.\overline{33}$	12b.) $33.\overline{3}\%$

13. Order the following rational numbers from least to greatest:

$.68, .\overline{666}, 68\%, \frac{4}{6}, 6.6 \times 10^2, 0.066$
 $\overline{660}$

$-.066, \frac{4}{6}, 68\%, 6.6 \times 10^2$
 Least \longrightarrow Greatest

14. Order the following rational numbers from greatest to least:

$.50, .555, .580, .05$
 $\frac{1}{2}, 55.5\%, 5.8 \times 10^{-1}, 0.05$

$5.8 \times 10^{-1}, 55.5\%, \frac{1}{2}, .05$
 Greatest \longrightarrow Least

15. Fill in the blank with the correct answers.

$\frac{3}{8} < \frac{4}{9} = .444$

a. 50%

b. $\frac{2}{5} = .40$

c. 0.300

d. $\frac{5}{8}$



Part IV: SOL 7.1d Determine the square root of a perfect square less than or equal to 400. *SOL 8.5 Identify two consecutive whole numbers between which the square root of a given number 0 – 400 lies.

16. The number 225 is a perfect square?

a. YES

b. NO



17. The number 196 is a perfect square?

a. YES

b. NO

*18. The square root of 17 lies between which two whole numbers?

4 and 5

*19. The square root of 40 lies between which two whole numbers?

6 and 7

20. What is the square root of 324?

18

21. Circle the perfect squares below?

4, 199, 250, 10, 289, 36, 1, 361, 50

Part V. SOL 7.1e Demonstrate absolute value using a number line. Determine the absolute value of a rational number

22. When plotted on a number line, which value is closest to the absolute value of -5? $= 5$

a. $|-18|$

b. $-|6| = -6$

c. $|-4| = 4$

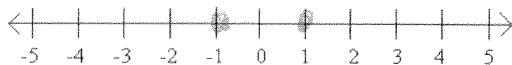
d. $|16| = 16$



23. Circle all the values in the table equal to 5:

-5	$\frac{1}{5}$	-5
5	-5	$ -5 $

24. Plot all values that have the absolute value of 1 on the number line.



25. Simplify: $|8| - |-2|$

$8 - 2 = 6$

26. Circle all the true statements in the table:

$- 2 \neq 2$	$ -12 \neq -12$	$ 652 = 652$
$- 43 = -43$	$ 21 \neq -21$	$ -36 = 36$

Handwritten calculations for perfect squares:

	$+2$	$+3$	$+4$	$+5$
1^2	4	9	16	25
2^2	16	36	64	100
3^2	36	64	100	144
4^2	64	100	144	196
5^2	100	144	196	256
6^2	144	196	256	324
7^2	196	256	324	400
8^2	256	324	400	484
9^2	324	400	484	576
10^2	400	484	576	676

***Part VI. SOL 8.2 Identify the subsets of the real number system to which a given number belongs.**

Classify each real number below by placing a checkmark in the box.

No \rightarrow irrational

	Irrational	Rational	Integer	Whole	Natural
27. -11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
28. 75%		<input checked="" type="checkbox"/>			
29. $\sqrt{25} = 5$		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
30. $\frac{1}{2}$		<input checked="" type="checkbox"/>			
31. 4		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>